



**MASSACHUSETTS BAY TRANSPORTATION AUTHORITY**

DUE DILIGENCE POSTING

BID#: 166-22

COMMBUYS # BD- 22-1206-MBTA-MBTA-  
82123

PARATRANSIT OPTIMIZATION

Date Issued: December 5, 2022



Massachusetts Bay Transportation Authority  
Due Diligence Posting  
Notice of Intent to Accept a Best Value Offer

The Massachusetts Bay Transportation Authority (MBTA) announces its intent to Accept a Best Value Offer pursuant to the Commonwealth's Due Diligence Posting Policy, to contract for the following with AlphaRoute pending results of this Notice of Intent ("Notice").

## Overview

The RIDE program of the MBTA provides door-to-door paratransit service to persons with disabilities who are unable to access or use the MBTA's fixed route transit system some or all of the time due to a qualifying physical, cognitive or mental disability. Since it began operation in 1977, the service has grown from a relatively small operation serving a 12-square mile area in Brookline, Cambridge, and parts of Boston, to one of the largest ADA paratransit operations in the nation serving an approximately 700 square mile area including 58 cities and towns with a combined population of 2.5 million. In Fiscal Year ("FY") 2022, The RIDE provided approximately 1.1 million trips to RIDE Customers. For a full description of The RIDE and its current policies, see The RIDE's website: <https://www.mbta.com/accessibility/the-ride>.

The RIDE program utilizes Dedicated Service Providers ("DSP") and Non-Dedicated Service Providers ("NDSP") to provide trips to customers under both ADA and non-ADA programs.

The MBTA seeks to provide paratransit service that is safe, convenient, cost-effective, and reliable. To achieve this vision in an environment of growing ridership, increasing customer needs, and tighter operating budgets, the MBTA is focused on enhancing operational structures, pioneering new technologies, and leveraging the vast array of data generated from the paratransit system using advanced analytics.

## Description

To optimize the trips served by the RIDE's Non-Dedicated Service Providers ("NDSP"), the MBTA seeks to partner with AlphaRoute to perform daily optimization of the assignment of trips to NDSP partners while respecting a number of conditions and calculations with respect to various trip and customer eligibility criteria, contractual provider trip volumes, provider-specific trip-based pricing, customer-specific provider-based opt-in, among other. This service will assist the MBTA in improving its trip scheduling capabilities, reducing costs, and improving customer service.

AlphaRoute currently has relationships. including with State of Vermont, NJ Transit (Newark, NJ), WeGo Transit (Nashville, TN), King County Metro (Seattle, WA), Brockton Area Transit (Brockton, MA), Toyota Mobility Foundation and various schools throughout the United States.

AlphaRoute submitted a proposal for "Paratransit NDSP Optimization and Optimal Driver Shifts Design" and completed the Innovation Proposal Process. The MBTA is posting this Notice rather than conducting a full procurement because the MBTA believes this opportunity represents the best value to the Commonwealth and is utilizing this Due Diligence Posting to



ensure that the process is open, fair and competitive. This process is completely independent of the MBTA's currently underway procurement for a new transportation management software (TMS) for paratransit scheduling and dispatch.

**Duration:**

The term of the contract is for one (1) year with the option to terminate after the initial four (4) month period based on the agreed upon success metrics, plus, two one-year renewal options at the MBTA's discretion.

Success metrics include:

1. Improvements in weekly RIDE performance by using AlphaRoute's NDSP optimization compared to the RIDE's current practices.
2. Average AlphaRoute NDSP optimization time of under 7 minutes for 4,000 daily trips.
3. Reasonable response time and product support.

**Proposed Services**

AlphaRoute, an MIT-founded company, has developed unique optimization tools accessible via API's and web-based software to help solve operational problems and augment existing systems capabilities without the complexity of a full technology transition. Some of the key characteristics of the AlphaRoute proposal is a solution which:

- can be easily implemented completely independent of the MBTA's current Adept software system and augment its capabilities without needing to integrate or otherwise connect to Adept;
- already exists, requires no additional development, and can be implemented and be production-ready with minimal configuration in a very short timeframe; and
- offer a low-risk solution to the MBTA while providing significant improvements in productivity and operational efficiency.

The AlphaRoute solution optimizes the allocation of trips between the dedicated and non-dedicated fleets using routing algorithms to efficiently define which are the best trips to be served by NDSP partners in order to maximize efficiency on the MBTA's dedicated fleet. At a minimum, the optimization takes into account:

- calculated trip cost;
- customer travel time and distance;
- productivity of the dedicated fleet;
- dedicated and non-dedicated fleet composition
- customer equipment and vehicle needs (ambulatory vs. non-ambulatory, lift required, etc.);
- customer opt-in status; and,
- minimum and maximum number of trips to be shifted per provider.

This analysis allows the MBTA to decide on which trips to outsource and find the optimal mix between different providers. The output is a file containing which trips should be served by each



NDSP provider at any point. It can be easily imported into the existing paratransit scheduling software or manually adjusted by the scheduling or dispatch teams.

To maximize efficiency, the MBTA intends to utilize this tool in the following ways:

- *Service Planning* - allow the algorithms to periodically (every 6 months or at any major change in the system) define the optimal mix between dedicated and non-dedicated service providers. The output of this analysis will be the optimal percentage (%) of trips to be serviced by MBTA and by each NDSP provider. This planning study will also support data-driven decisions in contracted service hours/trips with each vendor, new vehicle purchase and optimal fleet type mix (Vans, sedans, WAV).
- *Scheduling* - at the closing of trip reservations each day or at any point during the reservation window, allow the algorithms to optimize existing scheduled trips in the system to define which are the best trips to be served by each NDSP.
- *Day-of-Service* - at any point during the day of service find the best trips to be served by each NDSP.

AlphaRoute will support the project with the following resources:

#### *IT Infrastructure*

- Secure AWS cloud environment to host all optimizations tools. AlphaRoute's products are built on sophisticated high-availability, scalability and multiple availability zones concepts powered by Amazon Web Services. This modern architecture guarantees fast recovery time objectives and data durability.

#### *Data security and API development*

- Secure modern design minimizing the amount and type of information transferred (No driver or passenger personal information needed)
- End-to-end encryption
- Customization of our Data exchange API

#### *Product*

- Efficient state-of-the-art optimizations tools out of MIT research
- Easy, simple-to-use, low risk solutions
- 24/7 product support by phone, email or ticketing system

#### *Customizations and Future Developments*

- Product customization to the MBTA use case
- Long-term partnership and involvement in future R&D to solve the MBTA challenges

#### **Proposed Pricing:**

Per Trip Cost: \$0.085



## Determination of Other Interested Vendors

The intent of this posting is to determine if there are any other interested and qualified vendors. Any such vendors must submit documentation that you can provide a comparable or better offer.

### Response Requirement and Deadline

All Interested Vendors and Offerors interested in responding to this Notice, regardless of prior communications with the Department, must submit a Response to this posting containing evidence of their qualification and interest. All required information must be submitted by 12:00PM EST on the 19<sup>th</sup> of December 2022 as follows:

If, after the posting deadline has passed, interest is generated by this Notice, the Department will review all Responses and will determine whether they will: (i) withdraw the notice and not accept the Offeror's offer (and cancel the Notice of Intent) or (ii) accept the offer from the Offeror or (iii) accept an offer from another vendor offering a comparable or better value than the Offeror in their Response or (iv) accept the offer from the Offeror and from any other offerors offering similar value in their response.

### Additional Terms Required for Doing Business with the Massachusetts Bay Transportation Authority (MBTA)

Names of Standard Forms	Instructions
<a href="#"><u>Instructions for Vendors Responding to Bids Electronically</u></a>	Read and agree prior to submitting a Response.
<a href="#"><u>Due Diligence - Required Specifications</u></a>	Read and agree prior to submitting a Response.
<a href="#"><u>Prompt Payment Discount Form</u></a>	Complete electronically and submit as an attachment to Quote.
<a href="#"><u>Contractor Authorized Signatory Listing</u></a>	Read and agree. Sign and submit original with wet signature upon Award, if any.
<a href="#"><u>Authorization for Electronic Funds Transfer</u></a>	Read and agree. Sign and submit original with wet signature upon Award, if any.
<a href="#"><u>Request for Taxpayer Identification Number and Certification (W-9)</u></a>	Read and agree. Sign and submit original with wet signature upon Award, if any.
<a href="#"><u>Standard Contract Form and Instructions</u></a>	Read and agree. Sign and submit original with wet signature upon Award, if any.

### Quote Submission Method

Online Quote Submission via COMMBUYS is required. All Interested Vendors and Offerors must submit Quotes online using tools available only to Sellers registered in COMMBUYS. COMMBUYS provides Seller registration functionality at no charge. To register, go to [www.COMMBUYS.com](http://www.COMMBUYS.com) and click on the "Register" link on the front page. All Interested Vendors and Offerors who are awarded a contract resulting from this Notice, if any, will be required to maintain an active account during the duration of the Contract, by reviewing their registration information regularly and maintaining its accuracy.



## **COMMBUYS Quote Submission Training and Instructions**

The following resources are provided to assist Interested Vendors and Offerors in submitting Quotes:

- An online job aid on [How to Create a Quote](#);
- Webcast video on [How to Find Bids \(Solicitations\) and Submit Quotes \(Responses\) through COMMBUYS](#);
- Instructor-led trainings (ILT) and live webinar sessions on “How to Locate and Respond to Bids” may also be available. Check the [OSD Training Courses](#) schedule for Sellers/Business Entities for available locations, dates and times. Note that space is limited and pre-registration for trainings is required to attend. Follow instructions on the course schedule to register.

## **COMMBUYS Support**

Technical assistance is available during the procurement process. Every effort is made to respond to inquiries within one business day.

- **Website:** Go to [www.mass.gov/osd/commbuys](http://www.mass.gov/osd/commbuys) and select the COMMBUYS Resource Center link offered under Key Resources.
- **Email:** Send inquiries to the COMMBUYS Helpdesk at [COMMBUYS@state.ma.us](mailto:COMMBUYS@state.ma.us)
- **Telephone:** Call the COMMBUYS Help Desk at 1-888-MA-STATE (1-888-627-8283). The Help Desk is staffed from 8:00 AM to 5:00 PM Monday through Friday Eastern Standard or Daylight time, as applicable, except on federal and state holidays.

Interested Vendors and Offerors are advised that COMMBUYS will be unavailable during regularly scheduled maintenance hours of which all users will be notified.